

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
24 February 2005 (24.02.2005)

PCT

(10) International Publication Number  
**WO 2005/016396 A1**

(51) International Patent Classification<sup>7</sup>: **A61L 27/14,**  
29/04, 31/10, A61K 9/70, A61F 2/06

94952 (US). LYU, Su Ping [CN/US]; 6625 Garland Lane  
North, Maple Grove, MN 55311 (US).

(21) International Application Number:  
PCT/US2004/026516

(22) International Filing Date: 12 August 2004 (12.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/495,143 13 August 2003 (13.08.2003) US

(71) Applicant (for all designated States except US):  
MEDTRONIC VASCULAR INC. [US/US]; IP Le-  
gal Department, 3576 Unocal Place, Santa Rosa, CA  
95403 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): UDIPI, Kishore  
[US/US]; 3575 Alkirst Court, Santa Rosa, CA 95403 (US).  
CHENG, Pelwen [US/US]; 366 Breeden Street, Santa  
Rosa, CA 95409 (US). SHALABY, Shalaby [US/US];  
6309 Highway 187, Anderson, SC 29625 (US). CAMP-  
BELL, Todd [US/US]; 133 Grevilla Drive, Petaluma, CA

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

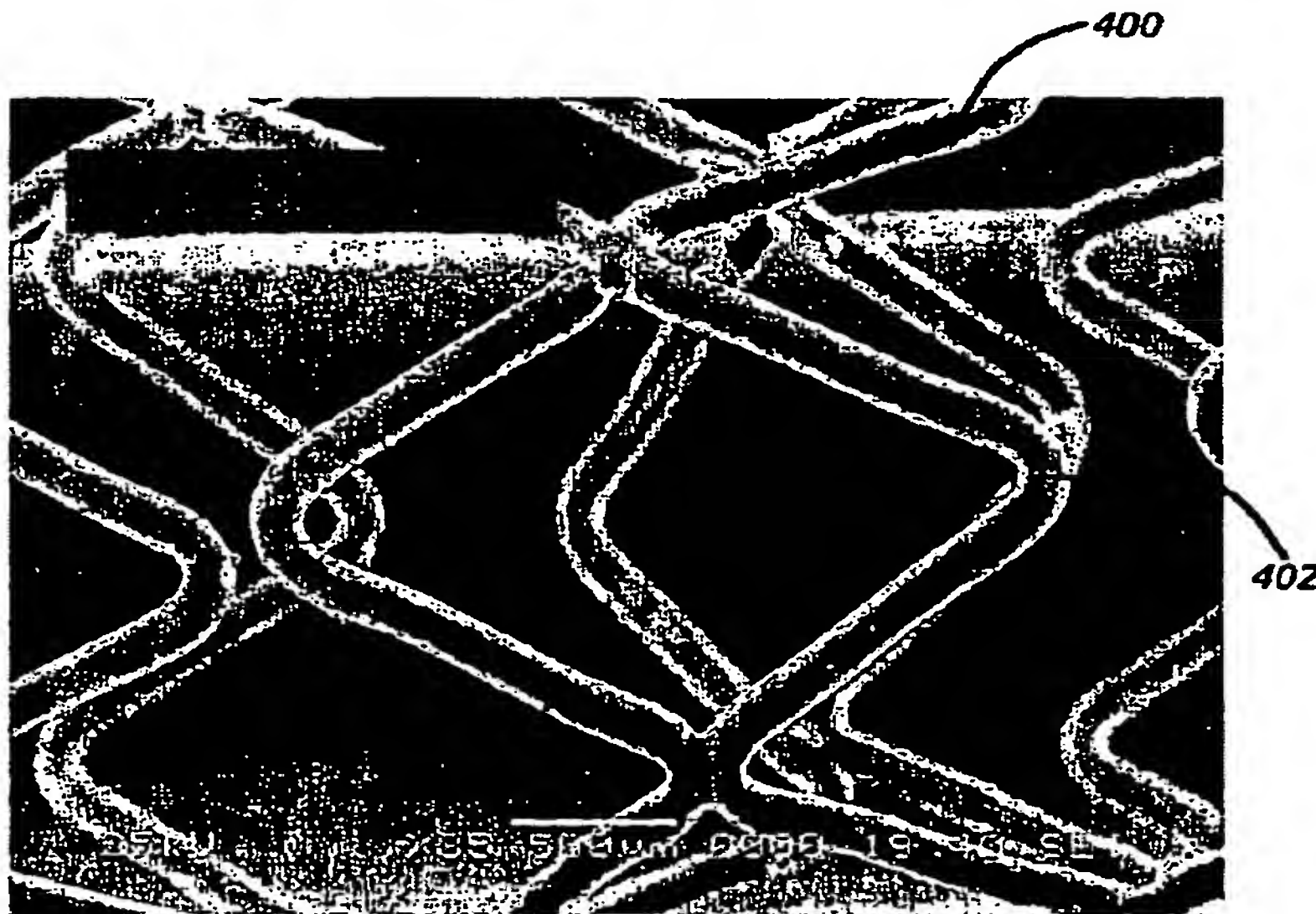
(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,  
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

[Continued on next page]

(54) Title: BIOCOMPATIBLE CONTROLLED RELEASE COATINGS FOR MEDICAL DEVICES AND RELATED METHODS



(57) **Abstract:** Biocompatible coatings for medical devices are disclosed. Specifically, polymer coatings designed to control the release of bioactive agents from medical devices in vivo are disclosed wherein the solubility parameters of polymers and drugs are closely matched to control elute rate profiles. The present application also discloses providing vascular stents with controlled release coatings and related methods for making these coatings.

WO 2005/016396 A1